Multiplexing

1. Fill in the missing blanks.

There are two methods of multiplexing. They are _____ Division Multiplexing and _____ Division Multiplexing.

Multiplexing allows _____ _____ speed lines to _____ one high speed line.

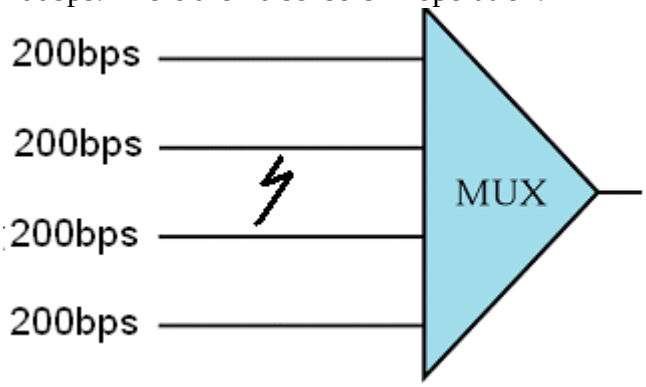
In _____, the available bandwidth is split into channels. A gap is left between adjacent channels. This gap is called the _____ _____ .

_____ has no _____ control and no _____ control.

2. A voice signal is allocated a bandwidth of 4kHz which covers the voice signal and the guard band. This channel in multiplexed by modulating a carrier frequency of 68kHz. What frequencies does the channel now occupy?

3. What is the main advantage of a statistical multiplexer compared with synchronous multiplexing?

4. At an oil refinery, sensors in a remote part of the plant generate a steady stream of data at a rate of 200bps. There are 20 sensors in operation.



a) Each frame sent by the mux provides a 5 bit data slot for every sensor. If no data is to be lost, what must the frame rate be?

b) Each frame has a 5 bit data slot for every sensor and two synchonising bits. How many bits are in each frame?

c) What is the data rate at the output of the mux?

5. Explain how the term hierarchy applies to the multiplexing?